IN THE CLAIMS:

1-5 (Canceled)

6. (Currently amended) A process for producing a rare earth oxide superconductor, comprising: ~~applying a mixture obtained by~~

mixing cerium with 5 to 90 mol%, in terms of the metal content, of at least one ~~or two or more elements selected from~~ rare earth element ~~elements~~ Re selected from the group consisting ~~(Re represents any one of elements~~ of Y, Nd, Sm, Gd, Eu, Yb, Ho, Tm, Dy, La and Er; ~~) with cerium~~

applying the mixture onto ~~to~~ a surface of a metal substrate by ~~a~~ liquid phase, metal organic deposition; ~~process and~~

calcining the applied mixture ~~performing calcination~~ at a temperature of 900°C or higher and lower than 1200°C under a reduced pressure of 0.1 Pa or higher and lower than atmospheric pressure to form an intermediate layer comprising a cerium oxide;, and then

forming a rare earth oxide superconducting layer on the intermediate layer.

7. (Original) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the content of the rare earth element Re in the mixture is 20 to 60 mol%, in terms of the metal content.

8. (Canceled)

9. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the intermediate layer is formed by calcination under a pressure ranging from 50 to 500 Pa.

10. (Currently amended) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the intermediate layer is formed by calcination at a temperature ranging from ~~fran~~ 950 to 1150°C.

11. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein metal substrate is a biaxially textured metal substrate.

12. (Previously presented) The process for producing a rare earth oxide superconductor according to Claim 6, wherein the rare earth oxide superconducting layer is directly formed on the intermediate layer.

13. (Currently amended) A process for producing a rare earth oxide superconductor, comprising: ~~applying a mixture obtained by~~

mixing cerium with 20 to 60 mol%, in terms of ~~the~~ metal content, of at least one ~~or two or more elements selected from~~ rare earth element ~~elements~~ Re selected from the group consisting ~~(Re represents any one of elements~~ of Y, Nd, Sm, Gd, Eu, Yb, Ho, Tm, Dy, La and Er~~;) with cerium~~

applying the mixture onto ~~to~~ a surface of a biaxially textured metal substrate by metal organic deposition; ~~MOD method, and~~

calcining the applied mixture and ~~performing calcination~~ in a reducing gas atmosphere containing ~~in which~~ 0.1 to 10% ~~of~~ H_2, ~~is added to an~~ Ar and N_2 ~~gas mixture,~~ at a temperature ~~ranging~~ from 950 to 1150°C and under a pressure ~~ranging~~ from 50 to 500 Pa, to form an intermediate layer comprising a cerium oxide~~;~~ and then

forming a rare earth oxide superconducting layer on the intermediate layer.

14. (New) The process for producing a rare earth oxide superconductor according to Claim 6 wherein the calcining is at a temperature of 950-1150°C.